LAB 13

Objective: Create your first Custom Resource Definition (CRD) API resource and create a corresponding custom resource.

A CRD API resource is a powerful API resource that will allow you to let Kubernetes create REST endpoints for new resources that you will create. In this lab we will create one, but we will not create a *controller* that will be able to watch these resources and act on them.

Below is the manifest of a CRD that defines a **`database`** object. Save it in a file called **`database.yml`**:

```
apiVersion: apiextensions.k8s.io/v1beta1
kind: CustomResourceDefinition
metadata:
  name: databases.foo.bar
spec:
  group: foo.bar
  version: v1
  scope: Namespaced
  names:
    plural: databases
    singular: database
    kind: DataBase
    shortNames:
    - db
```


Create it and list it:

```
$ kubectl create -f database.yml
$ kubectl get customresourcedefinitions
NAME                KIND
databases.foo.bar   CustomResourceDefinition.v1beta1.apiextensions.k8s.io
```

With this setup, a new API group has been created. You can now create a custom resource of type **DataBase**. Check the following manifest in your folder (*Course Resources*):

```
apiVersion: foo.bar/v1
kind: DataBase
metadata:
  name: my-new-db
spec:
  type: mysql
```

Create it and verify that **kubectl** has discovered it.

```
$ kubectl create -f db.yml
$ kubectl get db
$ kubectl get database
NAME         LABELS
my-new-db    DataBase.v1.foo.bar
```

You now have a new REST endpoint for **databases**. You can watch these in a custom built controller and perform actions based on *databases* events.

